Reponses to Public Comments on the
INVESTIGATION OF BIRTH DEFECTS AND
COMMUNITY EXPOSURES IN KETTLEMAN CITY, CA

Comment Number	Comment	Response	Action
Public meeting comments (12/2/10)			

1.	(CDPH received numerous comments concerning water quality and how the water quality would be fixed.)
	• Water quality and arsenic was a big concern of the night of the public meeting on December 2, 2010 in which the draft report for public comment was released.
	  ○ Kettleman city water is at 19 parts per billion
	  ○ Normal is 8 parts per billion.
	  ○ Levels are twice that of normal.
		CDPH strives to assure that all California residents have drinking water that meets current standards. Using funding provided by CDPH, the local water district, Kettleman City Community Services District (CSD), researched options to supply drinking water that is compliant with all drinking water standards. The final selection of a drinking water project option has not been made as of this writing. CDPH is working with CSD to see if the proposed project meets the federal and state requirements of CDPH's State Revolving Fund (SRF) program. CDPH has determined that it could provide funding to CSD if Kings County provides grant dollars for the remainder of the needed funds to implement a groundwater-based solution and meets all of the requirements of the SRF. The selected water system project option will require operations and maintenance costs. Affordability and sustainability of the selected project option are required considerations when using CDPH's SRF to construct capital improvement projects.
		CSD wells were recently found to have levels of arsenic about 16 parts per billion (ppb), which is above the recently promulgated state drinking water standard of 10 ppb. The previous standard was 50 ppb, but was revised downwards in 2006 to incorporate scientific data published after the earlier standard was established. CSD is not unique in this regard: drinking water testing from 2002-2005 showed that about 600 active and standby sources had peak levels exceeding the standard.
		Monthly meetings of the Kettleman City Community Services District board are open to the public and are held in Kettleman City on the third Tuesday of each month. For more information, contact CSD at 559 386-5866.
			Incorporated.

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2.	There are over 300 students at the school who drink the water.	The elementary school's water comes from a different well than the two that supply the rest of the town. Arsenic occurs naturally in the soil and is found in drinking water sources throughout California.[i] Prior to the last quarterly sampling, the Elementary School drinking water well met the arsenic drinking water standard,[ii] however, based on the recent samples, the school is currently out of compliance (11 parts-per-billion (ppb); the standard is 10 ppb). CDPH is communicating with Kings County, CSD, and the school district to determine water treatment alternatives to ensure future compliance with all drinking water standards. Although lead was detected in the well that supplies the school water system during the investigation, it was below the drinking water regulatory action level, and previous testing had not found lead. The school water was re-tested with samples taken from drinking water at the school, and no lead was detected. [i] Arsenic in Drinking Water: MCL Status, California Drinking Water Program. http://www.cdph.ca.gov/certlic/drinkingwater/Pages/Arsenic.aspx. Accessed on October 4, 2010. [ii] Kettleman City Elementary School 2008 Consumer Confidence Report; available at the Kings County Environmental Health Department.	*No changes to the report are needed*
3.	State owes the mothers an apology.	See response to Comment 59.	*No changes to the report are needed*
4.	The report should mention the babies that died.	Three of the infants with birth defects included in this study have died because they had very serious types of defects that are life-threatening. We extend our sympathies to the families of the children who have passed away. We modified the report to add the detail that three of the infants with birth defects have died. (See also response to Comment 4.)	*Incorporated information reporting on the number of children with birth defects who died.*

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5.	The issue of biomonitoring was mentioned by several persons.	Biomonitoring methods try to identify which environmental chemicals people may have been exposed to and then how much of those chemicals actually get into the body. The investigation of a potential birth defect excess in Kettleman City followed a staged approach. The initial step was to evaluate whether an excess exists. Then, further investigation was warranted to gather additional details on the individuals and potential exposures, which is what this stage of the investigation represents. Thereafter, the merits of other investigation tools like biomonitoring were considered. Biomonitoring is discussed further in Appendix 2. Biomonitoring was considered for use in the investigation. However, due to its limitations, staff determined that biomonitoring would not provide new information about the birth defects in Kettleman City. Limitations of biomonitoring in the Kettleman City birth defects investigation include: • There are biomonitoring methods for only a small subset of all chemicals. • Months to years have passed since the mothers had children. Most pesticides in current use are not stored in the body, so blood or urine measurements of pesticides or their breakdown products as measured today would not be representative of exposures that took place a year or more ago. • For most chemicals assessed with biomonitoring there is no clear interpretation of what different results mean. Biomonitoring studies show that everyone has small amounts of many chemicals in their bodies. For the vast majority of these chemicals, we don't know what these levels mean in terms of the person's health, nor can we tell what level is harmful. This type of information only exists for a very few chemicals that have been extensively studied, such as lead or mercury.	*Incorporated.*
6.	No community wide survey was taken similar to the survey by Green Action in Pueblo.	The original issue raised was based on the concern of excess birth defects among children born in Kettleman City. Our general approach in investigations where people are concerned about potential excess numbers of a health condition is to first verify if an excess exists. In this situation, our review of birth defects registry data confirmed an excess, so we followed up to try to identify a reason for this excess. That was the focus of this investigation. Conducting a community wide survey would generate different information about the community as a whole, but would not shed more light on birth defects. We also evaluated cancer. In addition, we reviewed available information on asthma, autism, and low birth weight, but no unusual findings were noted, so we did not examine those further.	*Comment noted; information on these other outcomes will be added to the report.*

Reponses to Public Comments on the Investigation of Birth Defects and Community Exposures in Kettleman City, CA

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7.	Bring in fresh drinking water, and limit pesticide use.	Efforts are underway to identify solutions for Kettleman City drinking water that meets all state standards. Arsenic levels in drinking water exceed the recently updated standard, as is true in several areas of California. The current arsenic drinking water standard is based on cancer as the primary and most sensitive health effect and is intended to be protective over a lifetime of exposure. Please also see response to Comments **1** and **2** regarding water.	*No changes to the report are needed*
8.	Want to make sure that something is done in the interim to address the water quality issue while a treatment facility is being built.	The state and local agencies involved are working to implement a solution as quickly as possible. See response to Comment 7 also.	*No changes to the report are needed*
9.	Report should mention the normal amounts of birth defects.	In a given year, we would expect somewhere between 0 and 3 children to be born with birth defects to mothers who lived in Kettleman City when their children were born. The specific number expected for a given year will vary depending on how many babies were born that year.	*Incorporated.*
10.	This report is only a start. Much needs to be done. Want to make sure studies continue to find answers. Can't just say you didn't find anything. Will you do more studies to the children born with birth defects?	Several comments address a similar idea. Our general approach to investigations such as this is to proceed step-wise. • The first stage was to review the information we already had to determine if there is an excess. That was the first step performed by CBDMP, resulting in the report released at the beginning of 2010. • Then we proceed to the next step, which in this investigation is to gather more detailed information than what the registry routinely maintains. At each step of investigation we evaluate whether there is more value to be gained by proceeding or not. • At this point, we have conducted a very thorough investigation. We spoke with the mothers in a detailed interview, reviewed medical records, and conducted an extensive investigation of the environment. We lack evidence that additional investigation would be fruitful in determining why these birth defects occurred. • We will continue to monitor to see if additional cases occur. See also response to Comment 41	*No changes to the report are needed*

Comment Number	Comment	Response	Action
11.	Take into consideration all the diseases in Kettleman City. • Daughter is sick and the doctor doesn't know why. • Promised to build a high school and hospital, but didn't.	This comment covers several topics. 1. This evaluation focused on birth defects because a review of cases in the area determined there was an excess number. We did not find abnormal rates of other health conditions we examined, including cancer, asthma, autism and babies born who had low birth weight. While gathering additional information may be helpful, we believe the most important specific public health focus for Kettleman City is to work to ensure that drinking water complies with existing standards. 2. Good health is important to all of us, and we are sorry to hear of your daughter's illness. CDPH forwarded this question to Kings County Health Department and received the following guidance: "We recommend that the woman with the sick daughter ask her provider for a referral to Childrens' Hospital Central California in Madera County. They are an excellent resource for children in the Valley. Physicians are used to having people ask for referral. Our Health Department's Public Health Nurses can help if there are transportation issues. This would be the quickest, most direct way of moving toward a solution. If the mom prefers another approach, the mom can call us and ask for help. Our PHNs regularly help people navigate the complex health care system." The Public Health Nurse may be reached by calling 582-3211 ext 2689 or 1-800-649-5399. 3. Unfortunately we do not know the past history of discussions on building a high school and hospital in Kettleman City. CDPH and Cal/EPA will work in good faith to follow through on commitments we make to Kettleman City residents.	*No changes to the report are needed*
12.	Believes report was done too quickly.	The investigation began in early 2010. We understood community members felt concerned about the safety of their community. We feel that a year was an efficient and realistic time frame within which to complete the investigation and provide results to the community.	*No changes to the report are needed.*
13.	Is addressing the drinking water going to also address exposure to chemical contaminants?	The goal of getting a new drinking water source or treatment would be to make sure all standards for chemical contaminants in drinking water are met. Improving the drinking water in Kettleman City for the purpose of meeting the arsenic standard also has the potential to resolve other concerns such as hydrogen sulfide in the water, which although it does not pose a health risk, it may be causing odor problems. Obviously, reducing chemical contaminant exposure from drinking water will not change chemical exposures from other sources. Other sources of chemical exposures identified in the report (primarily three agricultural pesticides as well as benzene emissions from equipment used to treat the drinking water) will be reduced either by statewide actions or localized actions described in the report.	*No changes to the report are needed.*

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14.	Comments on benzene in water. Cannot say that benzene did not affect the community in 2007.	Benzene has been monitored historically in Kettleman City and has been effectively removed from the community's drinking water through treatment since 1998.	*No changes to the report are needed.*
15	Why is Chem Waste given more permits when it has received fines for violations?	A decision regarding the proposed permit modification will not be made until DTSC has comprehensively analyzed potential impacts and demonstrated that any modifications to the Kettleman Hills Facility will not pose a significant risk to the residents of Kettleman City, other nearby residents, and the environment. Additionally, no permitting decisions will be made until all outstanding enforcement activities are completed and the associated violations have been identified and corrected. US EPA will go through a similar process to make a permit decision on whether the facility will continue to accept PCB wastes.	*No changes to the report are needed.*
16	PCB's are found in the electrical transformers.	Although no longer commercially produced in the United States, PCBs may be present in products and materials produced before the 1979 PCB ban. Products that may contain PCBs include: Transformers and capacitors; other electrical equipment including voltage regulators, switches, re-closers, bushings, and electromagnets; oil used in motors and hydraulic systems; old electrical devices or appliances containing PCB capacitors; fluorescent light ballasts; cable insulation; thermal insulation material including fiberglass, felt, foam, and cork; adhesives and tapes; oil-based paint; caulking; plastics; carbonless copy paper; and floor finish Prior to the 1979 ban, PCBs entered the environment during their manufacture and use in the United States. Today PCBs can still be released into the environment from illegal or improper dumping of PCB wastes, leaks or releases from electrical transformers containing PCBs, and disposal of PCB-containing consumer products into municipal or other landfills not designed to handle hazardous waste. PCBs may also be released into the environment by the burning of some wastes in municipal and industrial incinerators.	*No changes to the report are needed.*
17	DTSC stopped PCB testing at the chemical waste facility in 2008	In March 2008, DTSC approved a Waste Management proposal to remove PCB screening analysis from their required ambient air monitoring program established in 2006 in an agreement between Waste Management and DTSC. DTSC's approval was based on a two year record of PCB levels always found below the limit of detection. In 2009 a more comprehensive PCB sampling and analysis program, looking at soil and air, was conducted by Waste Management under the oversight of US EPA. Until a new ambient air monitoring program is approved incorporating the results of the US EPA directed study, Waste Management will resume the screening level PCB analysis as required in the 2006 ambient air monitoring program.	*No changes to the report are needed.*
18	US EPA started their own PCB testing in 2009	In 2009 a more comprehensive PCB sampling and analysis program, looking at soil and air, was conducted by Waste Management under the oversight of US EPA.	*No changes to the report are needed.*

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19	In 2007, PCB shipments went up 90%.	According to the PCB Annual Reports submitted by Waste Management, total PCB shipments received at the Kettleman Hills Facility were as listed below (in millions of kilograms). 2005: 19 2006: 76 2007: 32 2008: 12 2009: 22	*No changes to the report are needed.*
20	Don't let Chem Waste expand	See responses to Comments 15 and 24.	*No changes to the report are needed.*
21	The report failed to mention that the chemical waste facility was in violation previously.	The Kettlemen City Community Investigation focused on environmental conditions in Kettlemen City and sought to determine whether any current or historical activities in Kettlemen City or vicinity may have contributed to the observed birth defects. The investigation considered the proximity of the Waste Management facility and considered the waste received at the facility. Based on the soil and soil gas samples across the Kettleman City community, no significant impacts in the community were identified in association with current or historical commercial or industrial activities. Air monitoring by ARB during Summer 2010 and monitoring in 2009 by the facility with USEPA oversight indicated there were no measurable contaminants near any level of concern leaving the facility.	*No changes to the report are needed.*
22	Where is benzene in the study?	Benzene was identified in the groundwater samples collected from the two municipal wells above the regulatory standard. The concentrations in one well were 10 times higher than the other. Currently, the benzene is effectively treated and removed from the water prior to distribution to the Kettlemen City residents, as evidenced by the absence of benzene in all the tap water samples. Based on the soil and soil gas samples across the entire site, it does not appear the impacts are associated with current or historical commercial or industrial activities. The probable source of the benzene detected in the deeper municipal wells is naturally occurring hydrocarbons present in geologic formations that underlie the Kettleman City area. The School well, which draws water from a shallower aquifer than the municipal wells, did not exhibit any benzene levels.	*No changes to the report are needed.*
23	When is permitting going to stop?	A decision regarding the proposed permit modification will not be made until DTSC has comprehensively analyzed potential impacts and demonstrated that any modifications to the Kettleman Hills Facility will not pose a significant risk to the residents of Kettleman City, other nearby residents, and the environment.	*No changes to the report are needed.*

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24	When will the facility close?	The Kettleman Hills Facility is currently authorized to operate the landfill unit until it is full or the current permit expires in 2013, whichever occurs first. The storage and treatment operations are authorized until the current permit expires in 2013. Waste Management has proposed to construct another landfill unit that is currently under regulatory review – See response to Comment 15 above. Waste Management has proposed to expand the landfill and continue operations beyond 2013, which would require new permits approved by DTSC and the RWQCB.	*No changes to the report are needed.*
25	DTSC did not find PCB's on soil samples	This is correct. PCBs were not found in the soil samples collected in the community	*No changes to the report are needed.*
26	In 2007 there was a 40% increase in PCB shipments to KHF. This was not mentioned in the report.	This report did not investigate the operations of the Kettleman Hills Facility, so this increase in PCB disposal at the facility was not mentioned. Instead, the report investigated environmental conditions in Kettleman City that may have been associated with the birth defects. The air, soil and soil gas sampling was designed to detect PCBs present in the community that originated either from KHF or other sources. See response to Comment 19	*No changes to the report are needed.*
27	Why did the air monitoring station at the Kettleman City school measure higher air concentrations of some contaminants than the air monitoring stations near the Waste Management facility?	Kettleman City is located in the San Joaquin Valley and is subject to emissions from urban and vehicular sources in the Valley. Winds at the Waste Management facility are generally from the northwest. The air that passes over the facility from the northwest is less affected by urban and vehicular sources than the air in the Valley near Kettleman City For example, according to ARB's air monitoring, polychlorinated biphenyls (PCBs) were found in lower concentrations in air downwind of the facility than in Kettleman City. PCBs can be found in very low concentrations in the air nationwide, but are usually found in slightly higher concentrations in urban areas due to prior historical sources, such as the former use of PCBs in electrical equipment. The higher levels of PCBs in Kettleman City's air imply the PCBs mostly originated from these common urban sources, rather than the Waste Management facility. Regardless of the source, measured air concentrations of PCBs in Kettleman City were all below levels of health concern.	*No changes to the report are needed.*
28	How long do PCBs last in the air? Could PCBs emitted into the air at the Waste Management facility over the years still be in the air in Kettleman City?	Any PCBs emitted in the past have long since been blown away by the wind. The presence of any contaminant in the air is a function of the amount emitted, and the winds and atmospheric conditions. PCBs emitted into the air will be dispersed within minutes to hours by winds and other atmospheric conditions, such as rain. Stronger winds and unstable atmospheric conditions will lead to faster dispersion than calm winds and stable atmospheric conditions.	*No changes to the report are needed.*

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29	The draft Cal/EPA report doesn't note PCB data from U.S. EPA.	In 2009, U.S. EPA required the Waste Management facility to conduct air monitoring of PCBs upwind and downwind of their facility. The Cal/EPA report does not refer to the U.S. EPA findings because at the time the draft Cal/EPA report was released in November 2010 and then finalized in December 2010, U.S. EPA had not officially released their data. U.S. EPA released its report containing the data in January 2011. The report found that PCB operations at the facility did not affect environmental conditions in Kettleman City.	*No changes to the report are needed.*
30	Saying the wind only blows from the southwest from the Waste Management facility towards Kettleman City only five percent of the time still amounts to 400-500 hours per year, which can lead to exposure during those periods from Waste Management facility emissions.	This is a valid point. However, based on the results of ARB's air monitoring at the downwind perimeter of the Waste Management facility and the dilution of air concentrations by at least a factor of 10 over the 3.5 miles from the facility to Kettleman City (described on page 20 of the appended ARB report), Cal/EPA does not believe that emissions from the facility were responsible for the birth defects. Contaminant levels found in Kettleman City were similar to those in Fresno and Bakersfield. ARB's review of the Waste Management facility air-monitoring records between 2007 and 2009 did not find any indication that emissions from the facility affected air quality in the community during those years., Therefore, it is unlikely that airborne contaminants measured in this study at KHF posed health risks to the residents of Kettleman City, and Cal/EPA does not believe that emissions from the facility were responsible for the birth defects.	*No changes to the report are needed.*
31	Why was exposure to diesel particulate matter in Kettleman City compared with Kern County?	ARB conducted a local and regional assessment of public exposure to diesel particulate matter associated with diesel exhaust. ARB compared exposure in Kettleman City and Kings County with a neighboring county (Kern County) to indicate how exposures compare with other locations in the San Joaquin Valley. We recognize that residents of Kettleman City live in close proximity to truck traffic on nearby Interstate 5 and Highway 41. However, exposures to diesel particulate matter are higher in other portions of the San Joaquin Valley and much higher in large urban areas, compared with exposures in Kettleman City.	*No changes to the report are needed.*
32	Where is the benzene study?	ARB's assessment of benzene in the air near the water treatment units of Kettleman City is presented on pages 17-18 of the appended ARB report. The San Joaquin Valley Air Pollution Control District is further evaluating benzene emissions from the water treatment units.	*No changes to the report are needed.*
33	Why wasn't a study of the intersection done with regard to diesel exhaust?	ARB conducted a local and regional assessment of public exposure to diesel particulate matter associated with diesel exhaust, using approaches previously used by ARB in other communities. An assessment limited to one intersection would not have evaluated all of the sources of diesel particulate matter that affect Kettleman City.	*No changes to the report are needed.*

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34	Reduce pesticide exposure, limit pesticide use.	Pesticide air concentrations estimated using computer modeling exceeded the lowest acute screening levels for chlorpyrifos, diazinon, and MITC on several days out of the time period studied from late 2006 - 2009. Previous monitoring and additional data from other communities also indicated higher risk for these three pesticides. This earlier data led DPR to start comprehensive risk assessments for all three pesticides. DPR's comprehensive risk assessments include the evaluation of all exposures, including acute and chronic exposure, possible birth defects, and cancer risk. These risk assessments are in progress for chlorpyrifos and diazinon. The risk assessment for MITC is complete and it prompted DPR to develop measures to reduce exposures throughout California. DPR is beginning implementation of the MITC exposure mitigation measures statewide in January 2011, including application method restrictions and buffer zones. In addition, U.S. EPA began phasing in mitigation measures nationwide for MITC pesticides beginning in December 2010.	*This discussion was included in the draft report, so no changes to the report are needed.*
35	Just because a correlation between chemical waste and birth defects was not found, it does not mean there isn't one.	The statement is correct in that Cal/EPA investigation's findings are not proof that there is no connection between chemical exposures and the birth defects. However, the Cal/EPA investigation looked for over 150 different chemicals in the air, water, and soil of Kettleman City. The chemicals that were investigated are of concern to regulatory agencies that investigate contaminated sites and air pollution. Cal/EPA identified the principal sources of chemicals in the Kettleman City area and investigated the presence of chemicals associated with those sources that may cause birth defects. It is always possible that there are chemical contaminants in the community's environment that we did not investigate. However, we believe Cal/EPA accurately identified the principal sources of chemical contaminants in the vicinity of the community and investigated the potential presence of chemicals associated with those sources.	*No changes to the report are needed*
36	Study needs to continue for 2-3 more years until the permit is stopped.	The study was designed to produce extensive data on the potential presence of environmental contaminants in Kettleman City by the end of 2010. A longer study would have left concern and unanswered questions in the community for a much longer period. The results of the investigation do not indicate a need for continued monitoring in the community (although U.S. EPA has stated its intent to sample dust in several homes for the presence of pesticides). The study was designed to answer whether there were exposures to environmental contaminants in the community and not to determine if any permits should be granted or denied.	*No changes to the report are needed*
37	Doesn't believe the study has been thorough.	The Cal/EPA study was the most extensive that the agency has ever conducted in a single community. Cal/EPA identified the principal sources of environmental contaminants in the vicinity of Kettleman City, and produced information on more than 150 chemicals potentially emanating from those sources.	*No changes to the report are needed*
38	State that the investigation could not find answers rather than state there is no correlation.	Cal/EPA was unable to identify any environmental cause for the occurrence of birth defects in Kettleman City. That does not mean there was no environmental cause, but Cal/EPA was able to rule out many environmental factors as plausible causes of the birth defects.	*No changes to the report are needed.*

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39	Why wasn't an in-home dust sample study done?	Cal/EPA considered conducting air and dust sampling in the homes of the mothers who had children with birth defects, but then determined that this indoor sampling would not provide useful information because the chemicals in indoor air would mostly reflect current activities and chemical uses inside the home. Monitoring in the mothers' current or former residences in 2010 would not produce accurate information on chemical exposures at the time the birth defects occurred.	*This discussion was included in the draft report, so no changes to the report are needed.*
40	Why weren't cumulative impacts done?	DPR did look at cumulative risk from exposure to pesticides. The estimated cumulative risk from multiple pesticides on the day with the highest risk was only negligibly higher than the risk for a single pesticide. Cumulative risk was not examined for other chemicals in water, air and soil because only arsenic was found at a level that was a health concern. The other chemicals evaluated were generally at background levels.	*No changes to the report are needed.*
41	This report is only a start. Much needs to be done.	As discussed above, this was the most extensive investigation that Cal/EPA has performed in a single community. This exposure assessment report identified arsenic in the drinking water as a major concern, which was already known. It also identified problems with exposure to some pesticides that, while not immediate health problems, were higher than they should be. This has been noted in other communities and is being dealt with on a statewide basis. The study identified some other problems that do not affect the whole community, but need to be further investigated and fixed. This is discussed in the report. See also response to Comment 10.	*No changes to the report are needed.*
42	Why does the CDPH/EPA press release state that lead was not a chemical of concern?	The press release did not state lead was not a concern, but it did incorrectly state that, "Lead can cause other health problems, but it is not a known cause of birth defects." Lead was one of the chemicals of concern because of its harmful impact on fetuses and children. Cal/EPA regrets the error and has corrected the press release.	*This information will be added to the final report.*
43	Answer questions from today, then have 30-day period.	Questions and comments from the public meeting on December 2, 2010, are considered part of those received during the 30-day comment period. In this document, Cal/EPA is providing responses to both written comments and comments made at the December 2 meeting.	*No changes to the report are needed.*
44	Is this community healthy?	Cal/EPA's investigation found that the levels of chemical contaminants in Kettleman City are comparable to those in other San Joaquin Valley communities. Most of the chemical concentrations are below levels of health concern. Some air pollutants were detected above levels of concern, but these pollutants are a problem throughout the San Joaquin Valley and other parts of the state. Arsenic was found to be too high in the community's drinking water, although similar levels of arsenic can be found in drinking water in other San Joaquin Valley communities. Cal/EPA's investigation did not find any evidence that there are unique levels of pollutants that pose special risks to Kettleman City residents.	*No changes to the report are needed.*

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45	Look at sewage run-off/ dumping.	The Central Valley Regional Water Quality Control Board is aware of one recent sewage issue in Kettleman City. An approximate 1,000-gallon spill occurred due to plugging of a collection line in 2008. The spill occurred on vacant land and was reportedly cleaned up using appropriate measures. CalEPA is not aware of any other recent or current sewage runoff or spill in Kettleman City.	*No changes to the report are needed.*
Questions Gathered by the Promotoras (12/2/10)			
46	What will happen if more children are born with birth defects?	• We will continue to track the birth defects in Kettleman over the next few years to see whether the number of babies born with defects stays high or returns to expected levels. Any follow-up activities will depend on findings and an assessment of the likely usefulness of further investigation.	*Comment noted. Actions will be taken as described in recommendations.*
47	What will you do to improve the town's water?	See response to Comment 1.	*No changes to the report are needed.*
48	Why do we pay so much for our water? Are we paying a debt?	CDPH discussed this question with the Community Services District that provides the town's drinking water. • The water rates are set by the Kettleman City Community Services District to cover the existing operation and maintenance costs. Rates can vary between different communities, depending on the cost of available water sources. The water rates are based upon meter size and the commercial area rates are higher than the residential rates in Kettleman City. • Yes, the Kettleman City Community Services District has water system bonds and assessments being paid by the water rates. • For further information please contact the Kettleman City Community Services District (559) 386-5866. • Please also see response to Comment 1 also about upgrading water system in Kettleman City.	*No changes to the report are needed.*
49	Now that the results are in, the community wants to know if Chem Waste's permits will be extended.	See responses to Comments 15 and 24.	*No changes to the report are needed.*
50	What does the county do with the money they receive from Chem Waste fines?	CDPH referred this question to Kings County and received the following information: "Kings County does not expect to receive any of the fines assessed to Chem Waste by the US EPA. The County does have a hazardous waste tax however. In Fiscal Year 2010/11, revenues from the County's hazardous waste taxes are placed in the County's capital projects budget."	*No changes to the report are needed.*

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51	Why does the county not care about the needs of Kettleman City?	We are only able to respond to factual information regarding Kings County, which to our knowledge has been actively working to provide appropriate services for its residents. • The County made a request to the California Department of Public Health to investigate the birth defects and environmental conditions in Kettleman City. • The County brought an expert to educate the local clinicians about what can be done to improve pre-conception care • The County has initiated a request to the local Kettleman clinic to bring prenatal services to the residents. • Kings County has established a clinic in Kettleman City where immunizations are available as well as WIC services, including nutrition education classes and individual nutrition counseling as well as: ○ Breastfeeding education and support from certified breastfeeding specialists ○ Vouchers to purchase nutritious food at the grocery store ○ Referrals to health care and community service providers ○ See: http://www.countyofkings.com/health/pdf/Hanford%20Clinics-1.pdf. • Kings County has been working on obtaining grant funds for needed improvements in Kettleman City, including the successful award of a $140,000 Environmental Justice Grant from Caltrans to develop pedestrian safety improvements along State Route 41 through the community. • In order to make primary health care services available to Kettleman City residents, the County has arranged for Adventist Health to use the building for primary care clinics on Mondays, Wednesdays and Fridays of each week. • Kings County has been working to assist the Kettleman City Community Services District (KCCSD) to provide a safe supply of drinking water to Kettleman City for the last 15 years, including purchase by the County of 5 acres of land adjacent to the California Aqueduct to locate a surface water treatment plant and acquisition of 900 acre-feet of water rights to be used in the water treatment facility for Kettleman City. With the County's assistance, the KCCSD has also applied for funding to CDPH from the State Revolving Fund. Kings County continues to vigorously pursue a project to provide safe drinking water to Kettleman City. • Kings County has provided modern library, fire station and sheriff's substation buildings in Kettleman City. • Kings County Health Department may be reached at: (559) 582-3211; http://www.countyofkings.com/health/index.html.	*No changes to the report are needed.*
52	How is it that the investigation found that the air at the Waste Management facility is better than the school's air?	See response to Comment 27	*No changes to the report are needed.*

Comment Number	Comment	Response	Action
53	Is it safe to live in Kettleman City?	Every community has some level of environmental contamination in the air, water and soil. For this reason, nobody can assure that any place is fully safe to live. However, Cal/EPA's investigation found that levels of environmental contaminants in the air, water and soil of Kettleman City are comparable to those found in other San Joaquin Valley communities, and therefore we do not believe that Kettleman City is any less "safe" than other communities in the region. The recommendations in the investigation, particularly improvements to the community's drinking water, will reduce chemical exposures and health risks related to those exposures. Statewide measures to reduce pesticide exposures and improve air quality will benefit Kettleman City as well as other communities in the San Joaquin Valley.	*No changes to the report are needed.*
54	Why does the air have a bad smell at night?	The air can smell bad at night or during the day for several reasons. Odors may be more noticeable at night due to weather conditions. During the day, winds usually disperse and dilute pollutants and odors. At night, winds are often calmer and the air is more stable, so less dilution occurs. It's likely that the sources of odors are the same during the day and night. The Kettleman City area is an agricultural region, and all agricultural regions have odors at certain times. These odors can be caused by fertilizers or manure, decaying crops after harvest, pesticide applications, animal facilities, or other sources. Odors caused by pesticides are a different issue from the potential toxic exposures that were the focus of this assessment. Levels of pesticides that do not pose health risks may still produce unpleasant odors. DPR's efforts to reduce toxic exposures and volatile organic compound (VOC) emissions from pesticides should also reduce odors, but some odors may still be present. Two pesticides that cause odor complaints and have relatively high use in the Kettleman City area are MITC and chlorpyrifos. DPR is implementing measures to reduce emissions and exposure to MITC. The odor from chlorpyrifos applications is primarily due to the VOC "inert ingredients" rather than the "active ingredient" used in the pesticide products to kill pests. Besides causing odors, VOCs also contribute to smog in the San Joaquin Valley. A new chlorpyrifos product has less VOCs and less odor than other products. DPR is considering requiring pesticide manufacturers to reformulate other chlorpyrifos products as part of its program to reduce VOC emissions from pesticides and improve air quality.	*This discussion was included in the draft report, so no changes to the report are needed.*
55	We want people to pay more attention when they spray pesticides around the community.	This comment apparently expresses concerns about pesticide drift, but the specific concern is unclear. DPR has programs to address drift and other human exposures to pesticides. Under guidance from DPR, county agricultural commissioners enforce pesticide laws and regulations. County agricultural commissioners investigate all complaints of pesticides, including incidents of pesticide odors, drift, and illnesses. DPR has published a "Community Guide to Recognizing & Reporting Pesticide Problems" to assist the public when a pesticide problem is suspected. English and Spanish versions of DPR's community guide are available at http://www.cdpr.ca.gov/docs/dept/comguide/index.htm	*This discussion was included in the draft report, so no changes to the report are needed.*
56	Why were the fathers of the babies with birth defects not considered in your investigation?	The fathers were considered in the investigation; questions were asked of fathers about their work and other relevant factors during the interviews with the mothers.	*No changes to the report are needed.*

Comment Number	Comment	Response	Action
57	Is Westlake getting hospital waste and sewage? We want them to have a study/investigation as well.	CDPH discussed these with Kettleman City Community Services District (CSD), which provides the town's drinking water. By agreement, Westlake Farms receives waste water effluent from CSD. This effluent is used on non-edible crops. Discharges from Westlake go to canals that flow east or southeast, away from Kettleman City. There does not appear to be an exposure route from Westlake to Kettleman City, so we would not anticipate any exposures to occur to Kettleman City residents. In September 2010, the Central Valley Regional Water Quality Control Board adopted waste discharge requirements to regulate the Westlake Farms Composting Facility. The facility is permitted to compost treated sewage sludge and bulking agents. Westlake Farms anticipates it will begin construction of the facility in early 2011 and begin accepting sludge in 2013. The composting facility is prohibited from accepting untreated sewage or hazardous waste. Sewage sludge is treated at wastewater treatment plants to reduce pathogens prior to shipment to the Westlake Farms facility. Further pathogen reduction to below detectable levels occurs during composting. The waste discharge requirements include a monitoring program to ensure that incoming sludge is properly characterized and fully composted, and monitoring wells to ensure that groundwater beneath the facility is not degraded. Medical waste and biohazardous materials are handled separately at hospitals and should not enter the sewer system. The State's Medical Waste Management Act regulates the disposal of medical waste. Many pharmaceuticals are classified by State regulations as hazardous waste and are prohibited from entering the sewer system. In addition, the federal Clean Water Act requires Publicly Owned Treatment Works (POTWs) to implement a pretreatment program to control pollutants from the industrial users which may pass through or interfere with POTW treatment processes or which may contaminate sewage sludge. It is not clear what the goal of a study or investigation of Westlake would be, particularly in relationship to the birth defects investigation; so no study is proposed.	*No changes to the report are needed.*

Comment Number	Comment	Response	Action
Greenaction & El Pueblo Handout (12/2/10) Is There A Toxic Monster In Kettleman City?			
58.	**(1) State's Bias Was Shown When they Refused to Investigate the Birth Defects:** The two State agencies, Cal EPA and CDPH, had previously refused to investigate the birth defects and infant deaths, turning a deaf ear to the cries of Kettleman City mothers and other residents who desperately sought answers as to why so many children were being born with birth defects and dying. Why did the State agencies not want to investigate such a serious problem? Could it have to do with the fact that the Cal EPA and CDPH have been complicit in allowing the people of Kettleman City to be dumped on and polluted by many industries? Could it have anything to do with the fact that government agencies always claimed that the health of Kettleman City residents was fine when in fact it was not?	CDPH adheres to scientific principles and a step-wise approach when evaluating exposures and health risks, and operates independently of any business interests.	*No changes to the report are needed.*
59.	**(2) State Agencies Initially Implied that the Mothers' Lifestyle May Have Caused the Birth Defects, but Now Admit the Mothers Led a Healthy Lifestyle:** The first "fact sheet" put out by the State in February 2010 implied that the lifestyle of the mothers of the infants may have caused the birth defects. This "fact' sheet" put much more , emphasis on parental lifestyles instead of pollution as a possible cause of the birth defects, even though the State had been informed that the mothers led a healthy lifestyle free of smoking, drinking or drugs. The State's initial approach of suspecting or blaming the parents' lifestyle instead of pollution showed a bias on their part. Fortunately, the State agencies now admit the truth: the mothers' lifestyle was not the cause of the birth defects. The Draft State report admitted that "none of the mothers whom we interviewed used tobacco, alcohol, or drugs .... Also, the medical histories of the six mothers"… did not explain why they had babies with birth defects." As the State has now ruled out unhealthy behavior by the mothers as a possible cause of the birth defects, it leaves some to wonder what the mothers had in common to all have babies born in this time period with serious birth defects. There seems to be one answer that the state does not want to admit: the mothers all share one thing in common, pollution in their environment.	We regret that the educational information in the February 2010 *Birth Defects in Kettleman City* fact sheet was regarded as misleading by the commenter. The language used on page 4 of the document was: "CAUSES OF BIRTH DEFECTS Although the causes of many birth defects are unknown, families should be aware of associated risk factors. Some of the major known causes of birth defects include smoking, alcohol consumption, infections, vitamin deficiencies, use of certain medications, and poorly controlled diabetes during pregnancy. To learn more about birth defects, please visit our website at www.cdph.ca.gov/programs/CBDMP." The information was meant to provide background on what is known scientifically about causes of birth defects, and was not intended to describe the Kettleman City mothers specifically, which was the purpose of the follow up interviews.	*No changes to the report are needed.*

Comment Number	Comment	Response	Action
60.	**(3) The State Covered Up and Tried to Water Down the True Extent and Number of Birth Defects - Now They Finally Admit There Were More Birth Defects Than Would Be Expected:** **The State agencies initially made the incorrect claim that there was only one more birth defect than would have been expected. The State justified their claim by watering down the number of birth defects in the initial fourteen month period over a twenty-tw9 year period.** **In the twenty years prior to the recent spike of birth defects (1987 - 2006), there was not even one birth defect in fifteen of the years and only one in five of the years, for an average of .25 birth defects per year. But the outbreak of birth defects beginning in late 2007 was far above the normal rates.** **El Pueblo and Greenaction then discovered even more babies had been born with/birth defects than previously known. When we brought this information to light the State acknowledge that they knew of these cases but had not divulged them to the public.**	**The February 2010 *Birth Defects in Kettleman City* fact sheet summarizes the first review which was conducted in 2009 and covered data available at that time (1987- 2008) (http://www.cdph.ca.gov/programs/CBDMP/Documents/MO-CBDMP-KettlemanCityReport.pdf). It found that more children with birth defects had been born in the year 2008 than would be expected. The final report describes the second analysis, which was performed on the updated time period from 2007 – March 31, 2010 and confirmed the earlier reported excess. Both the original and updated analyses are accurate.**	***No changes to the report are needed.***
61.	**(4) State Failed to Investigate Infant Deaths:** The state never investigated why at least three infants who were born with birth defects died, a troubling and offensive omission of an enormously important fact.	See response to Comment 4.	--
62.	**(5) State Refused to Do Biomonitoring of Residents' Bodies:** The State ignored requests from community and environmental justice groups to conduct biomonitoring of the mothers and other residents to determine the types of chemicals in their bodily tissues and breast milk. Such testing has been helpful in other similar situations, such as the leukemia cluster in Fallon, Nevada, in identifying the toxic causes of clusters. The State refused to conduct such tests even though they are easy to perform and could reveal significant and relevant information.	See response to Comment 5.	--.
63.	**(6) No Community Health Survey Was Conducted by the State:** Even though it was a door-to-door community health survey that first discovered the birth defect and infant mortality problem, the State refused to conduct its own community health survey to officially determine the extent of the birth defect and health problems in Kettleman City.	See response to Comment 6.	--
64	**(7) Cumulative Health Impacts of all the Pollution Sources Were Not Evaluated:** The State agencies failed to consider or evaluate the combined, cumulative impacts of the many different pollution sources in and near Kettleman City as a possible cause of the birth defects, despite being well aware that multiple pollution sources can trigger cumulative and synergistic impacts on health. For example, the state did not consider how the pesticides might have combined with PCBs, hazardous wastes, diesel, contaminated drinking water and poor air quality in the region to affect peoples' bodies.	See response to Comment 40.	*No changes to the report are needed.*

Comment Number	Comment	Response	Action
65	**(8) State Investigation Could Not Recreate Conditions That Existed Before and During Outbreak of Birth Defect Cases:** Retrospective analysis of the conditions leading up to the outbreak of the birth defects cannot be done if adequate data from that time period does not exist or is not trustworthy. The State ignored requests to use modern environmental forensic techniques, such as tree ring analysis, to discover what contaminants may have been deposited historically in the community overtime.	DPR's evaluation of pesticide exposure did recreate the conditions that existed when the birth defects occurred. DPR evaluated pesticide applications that occurred during September 2006 through December 2009, based on records of pesticide applications and data from a local weather station. Using computer modeling, DPR estimated the pesticide air concentrations during this time period. The monitoring and sampling done by ARB only looked at current conditions, although for persistent chemicals like PCBs the sampling would have found high levels of these compounds in the soil if they existed there in 2007 to 2009. ARB also reviewed Waste Management's air monitoring data at its disposal facility from 2007 to 2009 Use of modern environmental forensic techniques is difficult when, in this case, there is no information on the likely cause of the birth defects. Cal/EPA first needed to look for a specific chemical cause. If we had found a possible link between a specific contaminant and the birth defects, we could have tried to use techniques like tree ring analysis to further investigate the possible link between the contaminant and the birth defects. However, we did not find a plausible link between a chemical contaminant and the birth defects.	*No changes to the report are needed.*
66	**(9) State failed to consider Chemical Waste Management's long history of violations of hazardous waste laws including monitoring violations, yet relies in part on Chem Waste's self-monitoring data:·.** The State improperly relied in part on Chem Waste self-monitoring data,. despite the fact that they were aware of chronic violations including illegal hazardous waste disposal activity, toxic spills of PCBs and failure to properly monitor PCBs that resulted in serious enforcement action.	The investigation that was carried out involved use of a wide range of information by the state with assistance of USEPA, including review of historical information, environmental sampling, monitoring and analysis. Air, water, soil and soil gas samples were taken to complement and confirm existing data from various sources. In one part of the analysis, the air monitoring results from ARB's monitors near the facility were compared to the facilities monitoring results from earlier years. The two results were found to be comparable. Our conclusions were based on not only data collected by the facility, but on our comprehensive investigation and review of all the results from our own sampling and monitoring at a variety of locations.	*No changes to the report are needed.*
67	**(10) State Failed to Consider that Shipments and Disposal of PCBs at Chem Waste went up dramatically in 2007, the same year the birth defect cases erupted:** According to documents provided by US EPA, Chern Waste received approximately 40% more PCBs in 2007 when compared with 2005. PCBs are carcinogenic (cause cancer) and have the ability to cause birth defects; this information should have been considered.	This investigation was not dealing with how much waste the Kettleman Hills Facility accepted or did not accept. No PCBs were detected in the soil or water in and around Kettleman City. Had there been large releases of PCBs from the treatment facility, we would have expected it to be found in the community's soil. PCBs are persistent chemicals and do not quickly disappear from soil. See also response to Comment 19.	*No changes to the report are needed.*
68	**(11) USEPA says the State DTSC Allowed Chem Waste to Stop Air Testing for PCBs and Pesticides in April 2008** According to US EPA, in April 2008 the DTSC granted Chern Waste a suspension of analyzing the air for pesticides and PCBs. (personal email from Arlene Kabei, US EP A, to Bradley Angel, Greenaction, 11123/10).	See response to Comment 17	--

Comment Number	Comment	Response	Action
69	**(12) Chem Waste may have been aware of the days that the State Air Resources Board was monitoring next to the Kettleman Hills Facility:** The state's draft report (page 21) says that "... six 24-hour sampling periods coincided with the Facility's 24-hour sampling periods ... " Did Chern Waste therefore know when they were being monitored? It appears that is the case.	ARB monitoring staff had to pass through the entrance gate at the Kettleman Hills facility in order to access the upwind monitoring station. Hence, the facility knew which days ARB staff were at the monitoring stations. However, the facility would not have known what samples were being changed at the ARB monitoring stations. Some samples were taken for 24 hours at a time, others were taken for 28 days and some were continuous samples.	*No change to report*
70	**(13) Illegal Radioactive Waste Dumping at Chem Waste Not Considered as State Denies Reality:** The draft completely ignores the fact that prohibited radioactive wastes were apparently disposed of at the Chemical Waste Management Kettleman Hills landfill.	This investigation was not addressing what Waste Management's Kettleman Hills' Facility accepted or did not accept. It was to assess the exposure of the community to environmental contaminants. Radioactivity was monitored at each site where soil samples were taken. Only normal background levels of radioactivity were found. The Department of Toxic Substances Control (DTSC) is the state agency solely entrusted with permitting Resource Recovery and Conservation (RCRA), non-RCRA, or Toxic Substances Control Act hazardous waste landfills. DTSC is similarly entrusted with permitting the disposal of such hazardous materials. CDPH does at times provide consultation to state agencies regarding disposal of contaminants. Regarding the Kettleman Hills Facility (KHF), CDPH provided a review of proposed disposal of contaminants at KHF. To our knowledge, no illegal dumping of "prohibited radioactive waste" has occurred or is proposed at KHF. Please see the attached 2 letters for clarification (See Appendix for letters).	*No changes to the report are needed.*
71.	**(14) In the Midst ofthe Birth Defect Crisis, CDPH Secretly and Improperly Approved What Would Have Been Illegal Dumping of Radioactive Waste at Chem Waste:** What would Have Been Illegal Dumping of Radioactive Wastes at Chem Waste:, On September 24,2009, the CDPH secretly, without public notice, hearings or a public. environmental review process, approved a request to dump radioactive waste' from the Santa Susana Field Laboratory at Chern Waste (Letter from Gary W. Butner, Chief, Radiologic Health Branch, Department of Public Health to Phil Rutherford, Manager, Health, Safety and Radiation Service, Boeing Corporation, Santa Susana Field Laboratory). Such wastes are expressly prohibited by state law and Chemical Waste Management's permits, yet CDPH approved it, anyway. This shipment was stopped only after El Pueblo, through their attorneys at the Center on Race, Poverty and the Environment, threatened to sue Chem Waste.	Please see response to Comment 70.	--

Comment Number	Comment	Response	Action
72	**(15) State Hypocritically Calls for Pollution Reduction and Monitoring As They Plan on Allowing Chemical Waste Management to Expand and Dump More Toxic Wastes:** While the state's draft report calls for some steps to be taken to reduce pollution in Kettleman City, the state is getting ready to issue new permits to Chem Waste to expand their giant hazardous waste landfill, the largest such facility in the western United States. As the state's investigation failed to find a cause for the birth defects and infant deaths; it would be irresponsible to allow any more pollution in this suffering community of Kettleman City. Existing pollution must be reduced, and new pollution prevented.	The purpose of this investigation was to assess the community's exposure to environmental contaminants that might have been the cause of the birth defects. It was not meant to determine the regulatory status of the hazardous waste treatment facility outside the community.	*No changes to the report are needed.*
El Pueblo & Greenaction Comments on Kettleman City draft report (12/21/10)			
73.	**1. Final State Report must acknowledge that State Agencies at first refused to investigate:** When informed of the birth defects and infant deaths, state agencies ignored the health crisis and refused to investigate the alarming news regarding the high number of birth defects and infant deaths in this tiny town. These same agencies had turned a deaf ear to the cries of Kettleman City's mothers and other residents when the birth defects and infant deaths were first discovered. In January, 2010, in response to an outraged community and a growing national uproar, California Governor Arnold Schwarzenegger directed the California Environmental Protection Agency (Cal EPA) and the California Department of Public Health (CDPH) to try to find out what caused recent birth defects in the San Joaquin Valley community of Kettleman City. For accuracy and transparency, the Cal EPA and DPH must acknowledge in their final report the truth – that they refused to investigate the situation in Kettleman City until ordered by the Governor to do so. Why did the State agencies not want to investigate such a serious problem? Could it have to do with the fact that the Cal EPA and CDPH have been complicit in allowing the people of Kettleman City to be dumped on and polluted by many industries? Could it have anything to do with the fact that government agencies always claimed that the health of Kettleman City residents was fine when in fact it was not?	CDPH adheres to scientific principles when evaluating exposures and health risks; it operates independently of any business interests.	*No changes to the report are needed.*
74.	**2. Final State Report must acknowledge that they failed to investigate the infant deaths:** The State "investigation" and report did not look into the infant deaths, and the final report should acknowledge this glaring omission.	See response to Comment 4.	--

Comment Number	Comment	Response	Action
75.	**3. Final State report must acknowledge the State understated the number of birth defects:** The State agencies released their Draft report on their investigation of Kettleman City's birth defects on November 22, 2010, entitling it "Environmental Exposure Assessment and Birth Defects Investigation." The Draft report confirms that Kettleman City had more birth defects than would be expected, vindicating what residents, community groups and Greenaction said when we first discovered the problem.	See response to Comment 60.	--
76.	**4. Final State report must contain an apology to Kettleman City mothers and acknowledge that the State's first "fact sheet" on this issue was misleading:** Reversing earlier attempts by the State agencies that implied the personal behavior of the mothers might have caused the birth defects, the Draft State report admitted that "none of the mothers whom we interviewed used tobacco, alcohol, or drugs….Also, the medical histories of the six mothers … did not explain why they had babies with birth defects." While we are pleased that the State finally recognized reality, the final report should include an acknowledgement that the "fact sheet" and statements initially made by the State incorrectly implied that the mothers' personal behavior might have been the cause of the birth defects. The State report should include an apology to the mothers for the misleading "fact sheet". The first "fact sheet" put out by the State in February 2010 implied that the lifestyle of the mothers of the infants may have caused the birth defects. This "fact sheet" put much more emphasis on parental lifestyles instead of pollution as a possible cause of the birth defects, even though the State had been informed that the mothers led a healthy lifestyle free of smoking, drinking or drugs. The State's initial approach of suspecting or blaming the parents' lifestyle instead of pollution showed a bias on their part. As the State has now ruled out unhealthy behavior by the mothers as a possible cause of the birth defects, it leaves some to wonder what the mothers had in common to all have babies born in this time period with serious birth defects. There seems to be one answer that the state does not want to admit: the mothers all share one thing in common, pollution in their environment.	See response to Comment 59.	--

Comment Number	Comment	Response	Action
77.	**5. Final State report should acknowledge that the State covered up and tried to water down the true extent and number of birth defects:** The State agencies initially made the incorrect claim that there was only one more birth defect than would have been expected. The State justified their claim by watering down the number of birth defects in the initial fourteen month period over a twenty-two year period. This twenty-two year period was not a scientific or accurate benchmark, and served only to attempt to give the impression that the large number of birth defects was not a large number. In the twenty years prior to the recent spike of birth defects (1987 – 2006), there was not even one birth defect in fifteen of the years and only one in five of the years, for an average of .25 birth defects per year. But the outbreak of birth defects beginning in late 2007 was far above the normal rates. El Pueblo and Greenaction then discovered even more babies had been born with birth defects than previously known. When we brought this information to light the State acknowledged that they knew of these cases but had not divulged them to the public. The State's excuse for not divulging the additional birth defect cases was allegedly to protect confidentiality, even though confidentiality was not an issue. The final State report should acknowledge that they withheld the number of known birth defects during the period of concern.	Different analyses address different questions, including a longer, updated time frame. All are correct and useful in providing a picture of birth defects in Kettleman City. Please also see response to Comment 60.	--
78.	**6. State "investigation" was incomplete due to failure to conduct biomonitoring of residents' bodies:** The State ignored requests from community and environmental justice groups to conduct biomonitoring of the mothers and other residents to determine the types of chemicals in their bodily tissues and breast milk. Such testing has been helpful in other similar situations, such as the leukemia cluster in Fallon, Nevada, in identifying the toxic causes of clusters. The State refused to conduct such tests even though they are easy to perform and could reveal significant and relevant information. At the recent State meeting in Kettleman City, an OEHHA representative discussed this issue with Bradley Angel of Greenaction, and acknowledged that biomonitoring would find many toxics in the bodies of the mothers, and in all of us – which is true. However, just because we all have toxics in our bodies does not mean that it is an acceptable body burden – and in fact indicates that our bodies are unwilling hosts to chemicals from our industrialized society. The presence of pollutants in our bodies needs to be part of any legitimate investigation. In addition, biomonitoring of residents might disclose abnormal levels of certain pollutants of concern. If you don't look for answers you won't find them.	See response to Comment 5.	--

Comment Number	Comment	Response	Action
79	**7. State "investigation" failed to use modern environmental forensic techniques:** The State ignored requests to use modern environmental forensic techniques, such as tree ring analysis, to discover what contaminants may have been deposited historically in the community over time.	See response to Comment 65	--
80.	**9. State "investigation" was flawed and incomplete as Cumulative Health Impacts of all the pollution sources were not evaluated:** The State agencies' "investigation" failed to consider or evaluate the combined, cumulative impacts of the many different pollution sources in and near Kettleman City as a possible cause of the birth defects, despite being well aware that multiple pollution sources can trigger cumulative and synergistic impacts on health. For example, the state did not consider how the pesticides might have combined with PCBs, hazardous wastes, diesel, contaminated drinking water and poor air quality in the region to affect peoples' bodies.	See response to Comment 40	--
81	**10. Many conclusions of State environmental exposure investigation are not based in reality, as State cannot recreate conditions that existed before and during outbreak of birth defects.** The State draft report makes conclusions despite the complete lack of independent or government tests results of pesticide and toxic emissions prior to and during the birth defect outbreak.	DPR's evaluation of pesticide exposure did recreate the conditions that existed when the birth defects occurred. DPR evaluated pesticide applications that occurred during September 2006 through December 2009, based on records of pesticide applications and data from a local weather station. Using computer modeling, DPR estimated the worst-case pesticide air concentrations during this time period. DTSC required perimeter air monitoring at the Kettleman Hills facility for several toxic air contaminants prior to and during the time of birth defects. While that monitoring was not conducted by state agencies, the monitoring was independently audited and the data routinely was reviewed by state agency scientists. The ARB appended report notes that perimeter air concentrations are similar to concentrations measured statewide and there does not appear to be a substantial difference in data from 2007 compared with 2010.	*No changes to the report are needed.*
82	**The final report should acknowledge that toxic waste from operations related to Chem Waste cannot be ruled out as a cause of the birth defects:** The environmental exposure investigation report makes the unsubstantiated claim that air tests supposedly found no link between the Kettleman Hills hazardous waste facility and environmental contamination in town. The problem and flaw with this conclusion is that there is a complete and total lack of adequate, independent or government testing to back up this claim.	ARB's monitoring conducted during the summer of 2010 was independent, and ARB is a government agency. As stated in the appended ARB report, no clear difference was seen when comparing data collected upwind and downwind of the facility, and these data were similar to concentrations of target analytes measured in Kettleman City. In addition to Cal/EPA's analysis, CDPH further found out that none of the mothers interviewed spent any time at or near the KHF facility. Also see the response to Comment 81	*This discussion was included in the draft report, so no changes to the report are needed.*

Comment Number	Comment	Response	Action
83	• **The final report should acknowledge that the recent air testing took place at a time when shipments and disposal of hazardous wastes were dramatically reduced due to shrinking landfill capacity.** The air tests conducted during the summer of 2010 by government agencies occurred at a time when Chem Waste knew they were being monitored and at a time that shipments and disposal of hazardous wastes and PCBs were dramatically reduced due to shrinking landfill capacity. It is unscientific and misleading to compare emissions detected during this recent period with emissions that may have occurred in previous years of massive shipments and toxic dumping, especially when there was no government testing during that prior period.	The appended ARB report acknowledges in section 7.5 that in 2010, the facility substantially reduced the volume of hazardous waste being treated and disposed. The appended ARB report also notes that a comparison was made by ARB looking at the air monitoring data collected by the facility since 2007 and that there does not appear to be a substantial difference in air monitoring results collected by the facility in 2007, when the facility was operating much as it has for many years, and results collected in 2010.	*No change to report*
84	• **State investigation failed to consider Chemical Waste Management's long history of violations of hazardous waste laws including monitoring violations, yet relies in part on Chem Waste's self-monitoring data:** The State improperly relied in part on Chem Waste self-monitoring data, despite the fact that they were aware of chronic violations including illegal hazardous waste disposal activity, toxic spills of PCBs and failure to properly monitor PCBs that resulted in serious enforcement action. Nowhere in the State's draft report do they mention or consider Chem Waste's long history of violations of hazardous waste laws, regulations and permit requirements. Many of Chem Waste's violations involve PCBs, a banned and highly toxic chemical linked to cancer and birth defects.	See response to Comment 66	--
85	• **State failed to consider that shipments and disposal of PCBs at Chem Waste went up dramatically in 2007, the same year the birth defect cases erupted:** According to documents provided by US EPA, Chem Waste received approximately 40% more PCBs in 2007 when compared with 2005. PCBs are carcinogenic (cause cancer) and have the ability to cause birth defects; this information should have been considered and should be acknowledged in the final State report.	The monitoring and sampling done by Cal/EPA only looked at current conditions, although for persistent chemicals like PCBs, the sampling done by Cal/EPA would have found high levels of these compounds in the soil if they existed there in 2007 to 2009.	*No changes to the report are needed.*
86	• **Final State report should acknowledge that the State DTSC allowed Chem Waste to stop Air Testing for PCBs and Pesticides in April 2008** According to US EPA, in April 2008 the DTSC granted Chem Waste a suspension of analyzing the air for pesticides and PCBs. (Personal email from Arlene Kabei, US EPA, to Bradley Angel, Greenaction, 11/23/10).	See response to Comment 17	--

Comment Number	Comment	Response	Action
87	• **State's Final Report must retract incorrect claim that US EPA itself conducted comprehensive one-year air monitoring of PCB air emissions at Chem Waste in 2009:** At the December 2, 2010 State meeting in Kettleman City, State officials several times stated that the US EPA itself did one-year of virtually non-stop air testing for PCBs next to the Chem Waste site in 2009. This statement is not true, as US EPA has confirmed they did not do even one day of its own air monitoring next to Chem Waste. These claims by officials at the meeting in defense of Chem Waste were not only inaccurate, but again demonstrated that the State is quick to jump to Chem Waste's defense even when the facts prove otherwise.	At the time of the meeting, Cal/EPA understood that U.S. EPA had been sent the PCB air monitoring samples taken by the Kettleman Hills facility to be analyzed and that a U.S. EPA laboratory analyzed the samples. We also understood that U.S. EPA was itself preparing the congener study report. We later learned that U.S. EPA required the facility to do the monitoring, and to have an independent lab analyze the samples and a consultant prepare the report. USEPA closely followed these activities and reviewed the congener report before it was released to the public in January 2011. Cal/EPA regrets making inaccurate statements concerning this at the December 2 meeting. While U.S. EPA did not take the samples or prepare the report, it did closely oversee the monitoring and the report preparation.	*No changes to the report are needed.*
88	**The Final State report should acknowledge that radioactive waste was apparently illegally dumped at Chem Waste:** The draft report completely ignores the fact that prohibited radioactive wastes were apparently disposed of at the Chemical Waste Management Kettleman Hills landfill.	See response to Comment 70	--
89	**11. In the Midst of the Birth Defect Crisis, CDPH Secretly and Improperly Approved What Would Have Been Illegal Dumping of Radioactive Wastes at Chem Waste:** On September 24, 2009, the CDPH secretly, without public notice, hearings or a public environmental review process, approved a request to dump radioactive waste from the Santa Susana Field Laboratory at Chem Waste (Letter from Gary W. Butner, Chief, Radiologic Health Branch, Department of Public Health to Phil Rutherford, Manager, Health, Safety and Radiation Service, Boeing Corporation, Santa Susana Field Laboratory). Such wastes are expressly prohibited by state law and Chemical Waste Management's permits, yet CDPH approved it anyway. This shipment was stopped only after El Pueblo, through their attorneys at the Center on Race, Poverty and the Environment, threatened to sue Chem Waste.	See response to Comment 70	--
90	**12. Final State report should acknowledge close relationship between State officials and Chem Waste/Waste Management:** In the spirit of full disclosure and transparency, the final State report should acknowledge that top state officials and agencies have a close relationship with Waste Management officials. The report should also be transparent and truthful in acknowledging that these State agencies are the same ones that have allowed decades of pollution in Kettleman City, including permitting the giant Chemical Waste Management hazardous waste landfill. We believe the close ties between the agencies and the giant hazardous waste company should be disclosed in the report.	The Kettleman City Community Assessment was conducted by Cal/EPA and its boards, departments, and office, in close cooperation with the California Department of Public Health, the USEPA Region 9, and local agencies. Cal/EPA's Department of Toxic Substances Control and the Central Valley Regional Water Quality Control Board, along with the U.S. EPA and several local entities, regulate various aspects of the facility's operations, and their regulatory activities have long been a matter of public record. These regulatory agencies are responsible for ensuring that the facility's operations do not pose risks to human health or the environment. The Cal/EPA assessment independently investigated whether the facility's operations were linked to the birth defects and determined that contaminants from the facility did not impact the community.	*No changes to the report are needed.*

Comment Number	Comment	Response	Action
91	**13. State Hypocritically Calls for Pollution Reductions and Monitoring As They Plan on Allowing Chemical Waste Management to Expand and Dump More Toxic Wastes:** While the state's draft report calls for some steps to be taken to reduce pollution in Kettleman City, the state is getting ready to issue new permits to Chem Waste to expand their giant hazardous waste landfill, the largest such facility in the western United States.	The Kettleman City Community Assessment focused on potential sources of contamination that may affect the community. There is a comprehensive process for review of permit applications. DTSC will consider the findings of the Kettleman City investigation along with other information that is required by the regulations before reaching permit decisions.	*No changes to the report are needed.*
Waste Management's and Their Consultants' Comments on Draft Report (12/21/10)			
92	CALEPA may want to mention elements of the exposure assessment study that were expanded in response to comments on its Technical Workplan. For example, it appears that the State may have evaluated more compounds than originally proposed, collected air measurements from additional locations (e.g., benzene near water treatment units in Kettleman City and pesticide air data), and collected meteorological data from additional locations.	Information on changes to the Technical Work Plan was mentioned in the response to comments on the work plan and some information is also given in the report.	*No changes to the report are needed.*
93	p. Cal/EPA-17. The report correctly notes that KHF conducts regular air and groundwater monitoring as part of its permit requirements. We recommend that CALEPA also mention that KHF regularly submits the monitoring results to the State as part of its permit requirements.	The report is focused on environmental exposures in the community, of which the Kettleman Hills Facility is only one potential source. There was not an effort to describe the activities of the facility except where it was helpful to the main focus of the report. There is a discussion in the report about how the facility's air monitoring results compared to the results of ARB's efforts.	*No changes to the report are needed.*
94	p. Cal/EPA-21. We support U.S. EPA's plan to conduct indoor air sampling in some Kettleman City homes. It may be informative to sample not only for pesticides, but also chlorinated dioxins and furans as well as polychlorinated biphenyls (PCBs), since these compounds are environmentally persistent and were selected as compounds of concern for this investigation.	Comment noted	*No changes to the report are needed.*
95	p. Cal/EPA-24 and ARB-8. The report mentions quality control procedures used to help ensure the reliability of the sampling results. It is not clear, however, whether blank samples were routinely collected or whether the measured ambient air data were validated.	Lab and trip blanks were utilized for the filters/sorbents used to collect air samples for PCB/dioxin/furan congeners. Lab blanks were also collected for the canisters used to collect air samples for carbon disulfide, benzene, toluene, and ethyl benzene, and for the filters used to collect air samples for metals. Air monitoring results were not corrected to account for concentrations found in the blank samples. Zero air checks were performed as part of calibrations for the continuous analyzers of sulfur dioxide and nitrogen dioxide. All ARB data presented in the draft report were validated.	*Report has been modified to reflect comment*
96	p. Cal/EPA-27 and ARB-18. The main report on page Cal/EPA-27 notes that the Department of Pesticide Regulation (DPR) relied on meteorological data collected from station #15 in Stratford for dispersion modeling of pesticides. In the ARB report (ARB-18), meteorological data from Lemoore was used for air dispersion modeling of volatile organic compounds (VOCs), metals, dioxins and furans, and PCBs. If different meteorological datasets were used in two different air modeling analyses, it may be helpful to discuss this factor and its potential impact, if any, on the study's conclusions.	The report discusses the data from other weather stations that DPR considered, including the one at Lemoore. DPR selected the Stratford station because it is closest to the agricultural sources that DPR modeled. Stratford and Lemoore are only about ten miles apart and have no terrain between the two towns that might influence wind direction. The two meteorological data sets show prevailing winds from the northwest. Modeling results based on the two data sets should be similar.	*No changes to the report were made.*

Comment Number	Comment	Response	Action
97	p. Cal/EPA-30. The risk assessment states that measured levels of compounds in environmental media were compared to health-based criteria and, if concentrations were found to exceed these criteria, that they would then be compared to background or typical environmental levels. This two-tiered approach for evaluating the environmental monitoring results seems reasonable.	Comment noted.	*No changes to the report are needed.*
98	p. Cal/EPA-32. The report states that the Office of Environmental Health Hazard Assessment (OEHHA) evaluated potential health effects such as asthma and cancer in the exposure assessment. It is not clear where this evaluation and its results are presented in the report.	The evaluation was discussed in the results and the risk evaluation sections of the report. In the result section, there are comments about concentrations of the environmental chemicals being above or below different regulatory standards and health guidance. In the risk evaluation section, more specific discussions were given. Individual health endpoints were not discussed for many of the comparisons because that type of discussion can become very lengthy and would not change the bottom line that there may or may not be a health concern base on the environmental level of the chemical.	*No changes to the report are needed.*
99	p. Cal/EPA-39. Chlorinated dioxins. It is noted that most of the average dioxin congener concentrations were less than 20 fg/m^3. It is not clear why 20 fg/m^3 is highlighted as a comparison point in this statement.	The reason 20 fg/m^3 was chosen was for the simple fact that except for the two congeners with the highest concentrations at the three Kettleman locations, the other congeners analyzed were found to be below 20 fg/m^3. The congeners with the two highest concentrations were never below 20 fg/m^3.	*No changes to the report are needed.*
100	pp. Cal/EPA-39, Cal/EPA-41, and Cal/EPA-57. It is not clear where in the report the measured PCB and dioxin and furan results, or the modeled diesel particulate matter (DPM) results, were compared to health-based criteria.	The measured PCB, dioxin and furan congener levels were not compared to health based criteria in the draft report, but that comparison will be added to the final report. The highest "Toxic Equivalents" or TEQ value for the combined measured congeners of PCB, dioxin and furan was less than 10 TEQ femtograms per cubic meter (fg/m^3). The most sensitive endpoint is cancer and the concentration in the air needed to give an estimated excess lifetime cancer risk is 260 fg/m^3. The diesel particulate matter (DPM) level estimated in Kettleman City was also not compared to a health based criteria, but will be added to the final report. Within the gridded street area of Kettleman City, the DPM concentrations attributed to all of the emission sources included in the modeling was approximately 0.09 $\mu g/m^3$. The reference exposure level (REL) for DPM, developed for respiratory effects is 5 $\mu g/m^3$. The cancer health criterion for the DPM concentration in the air needed to give an estimated excess lifetime cancer risk is 0.003 $\mu g/m^3$. As discussed before there are exposures in the community that are higher than the health criterion set for the chemical, but normal exposures in other areas of the San Joaquin Valley and California that are the same ore higher than found in Kettleman City. The weighted average concentration of DPM in Kings County is 0.9 $\mu g/m^3$ and that for neighboring Kern County the weighted average concentration is 1.3 $\mu g/m^3$.	*Changes to the report will be made.*

Comment Number	Comment	Response	Action
101	p. Cal/EPA-41, Cal/EPA-42 and ARB-20. The report correctly notes that prevailing winds in the area are from the northwest and that winds only very rarely blow from KHF towards Kettleman. It is recommended that the report also mention that even when winds blow from KHF in the direction of Kettleman City, air concentrations are greatly reduced over the roughly 3.5 mile travel distance between KHF and Kettleman City due to air dispersion and dilution. The report states on page Cal/EPA-42 that computer models show concentrations "would be, at most, one-tenth of the levels originating from KHF, due to atmospheric dispersion and dilution." This dilution factor does not reflect the results of air dispersion modeling conducted as part of the B-18/B-20 Subsequent Environmental Impact Report (SEIR) that modeled concentrations as far out as Kettleman City from KHF. This modeling showed that maximum 24-hour average air concentrations associated with potential emissions at the facility decreased by about 40 times between the facility boundary and Kettleman City while annual average concentrations decreased by about 170 times (Source: Shaw Environmental (Shaw). 2007. Air Quality Technical Analysis: Kettleman Hills Facility B-18/B-20 Landfill Disposal Project. Submitted to CH2M Hill.)	As noted on page 20 of the appended ARB report, when the wind comes from the southwest, the dilution factor between the facility and the town has been estimated by air dispersion computer modeling to be at least 10. In 1988, during a several hour tracer gas study conducted at the facility by an environmental consultant under contract to ARB, with winds from the southwest the dilution factor was determined to be 24. These are both worst-case estimates based on nighttime conditions with light winds and a stable atmosphere. The dilution factor over a 24-hour period would be greater than 10, which is consistent with the finding of the environmental consulting firm.	*Report has been modified to reflect comment*
102	p. Cal/EPA-8. The report states that "Groundwater is found approximately 170 feet below-ground surface (bgs) in saturated sandstone beds or water-bearing zones (WBZs)." This should be corrected to read, "Groundwater is found approximately 170 feet below-ground surface (bgs) in alluvium and upper Tulare formation aquifers."	Comment noted and wording changed.	*Changes to the report will be made.*
Comments by Daniel Wartenberg, PhD (12/21/10) Independent Expert Working for the Residents of Kettleman City			
103	<u>Part 1</u> A. Investigation of Birth Defects in Kettleman City, by California Department of Public Health Investigation of Birth Defects in Kettleman City, *Since I am just receiving the birth defects data at the deadline for submitting these comments, I do not have comments at this time. It is reassuring that the report validates the perceived excess of structural birth defects beginning in 2008 that has been reported by community residents.*	Comment noted.	*No response required.*

Comment Number	Comment	Response	Action
104	B. An Evaluation of the Pattern of Cancer Occurrence in the Vicinity of Kettleman City, California, by California Department of Public Health *My greatest concern with the analysis of the cancer incidence is that the approach used for the interpretation of the results deviated from standard practice in a manner than minimizes the likelihood of validating the perceived excess. Given the context of an evaluation of an observed excess, the statistical focus would more appropriately be on the size of the excess (the SIR) not the statistical significance or p-value.* *It is reassuring that the analysis of adult cancers did not show unusual patterns.*	We appreciate the comment from Dr. Wartenberg, who has himself devoted much time and effort in assessing concerns regarding perceived cancer excess in the community. The scientific process and community surveillance is a give and take process through all phases. The California Cancer Registry (CCR), a program of the California Department of Public Health (CDPH) performs multiple investigations of community cancer concerns each year throughout the state with the analysis typically being performed at the census tract level. The CCR considers this work a part of its mission of cancer surveillance, which is distinct from research and hypothesis testing. Given that California has more than 7,000 census tracts, and tracks more than 80 types of cancers, the likelihood that at least one of those cancers will be elevated in any given census tract due to chance alone is quite high. To take into account this issue of multiple testing throughout the state and to reduce the number of false-positive findings, the CCR has established a standard that uses a 99% confidence interval rather than the standard 95% confidence interval that is widely used in research settings. Establishing the level and type of error that one is willing to accept in epidemiologic studies is a judgment call, and there are valid statistical and societal arguments to be made for a variety of approaches. While opinions may differ about when to determine a result “statistically significant”, the bottom line is that the point estimate does not change with statistical testing. We agree that any observed excess should be considered within the context of the evaluation, and a determination of the need for further action be made based upon multiple factors, not just one point estimate and a test of statistical significance. For childhood cancers in the census tract which encompasses Kettleman City, the Standardized Incidence Ratio (SIR) was 1.8, which is noted in the report as being elevated. There are broader regional concerns about childhood cancers in Kings County and the southern San Joaquin Valley as noted in the report, and childhood cancer findings reported for this census tract need to be considered in that context. The focus of this investigation, however, was Kettleman City, not Kings County or the region, and the report notes that none of the children with acute lymphocytic leukemia or ALL (the most common form of childhood cancer) actually resided in Kettleman City proper. No additional childhood cancer cases among residents of the census tract have been reported to the CCR since 2005.	*Comment noted.*

Comment Number	Comment	Response	Action
105	**Part 2** Kettleman City Community Exposure Assessment, by California Environmental Protection Agency Introduction: Chemicals of Interest and Potential Sources of Contamination *The report describes numerous sources of contamination, as noted above, including pesticides from field applications, arsenic and benzene in drinking water (both known human carcinogens), hazardous waste and air pollution. Unfortunately few numbers are provided, precluding evaluation of patterns or trends in contaminants. We know what is there in generic terms, not how long it has been there, if it moves with changing environmental conditions, nor how common exposures are. For example, we have seen reports of historically elevated levels of benzene in the Elementary School well, are told now that there is none, even though the well has no treatment, but do not know why this water source is no longer contaminated nor when the benzene was removed. Without actual data reports, this raises concerns. Providing data in the interest of transparency would be helpful.*	DPR modeling of pesticides over the years of concern did provide a pattern and trend for agricultural pesticide exposures. While only one set of well water samples were taken, these wells have been monitored over the previous years because they are drinking water wells. This past monitoring found arsenic and benzene, so their presence in the water has been long known. The air monitoring has not been done in the community before, but it did not identify levels different than found in other areas of the San Joaquin Valley. The soil sampling had not been done before, but high levels of the more persistent, nonvolatile chemicals from the last few years would still be expected to be detectable. Finally, benzene has not been a problem in the school well water and so there has been no need for a treatment unit for that well.	*No changes to the report are needed.*
106	*Similarly there is mention of hazardous waste but no indication of its transport, seepage or other migration from the site, through leaks, spills, emissions or other processes. It is difficult to believe that a facility of such large size never has any accidental releases. More transparency is needed.*	While there may have been spills and accidents at the Kettleman Hills Facility, there was no indication they lead to chemical exposures in the community. As discussed in the report, groundwater under the facility is not connected to the aquifers the community uses to get their water. Volatile chemical releases from the facility have not been identified in recent years and the concentration of any release would be drastically reduced by the time it reached the community.	*No changes to the report are needed.*
107	*CalEPA conducted an interview study of 6 mothers of children with birth defects asking questions about medical history, lifestyle, diet, personal behaviors, and possible exposures including parental occupations, etc., seeking to implicate or vindicate risk factors. While we recognize the difficulties in recruiting subjects, the validity of drawing inferences from this small a sample, without a pre-specified comparison population, and without validation of the individual response, is questionable at best. We praise the intent, but question the value and interpretability of the results.*	The interview portion of the investigation was conducted by CDPH, not Cal/EPA. We recognize limitations inherent in this investigation and have attempted to describe them, while still recognizing the value of the information that was gathered. The sample size is limited by the number of birth defects that occurred, the ability to locate the families involved, and their willingness to participate. Well-known episodes of environmental exposures that have produced dramatic clusters can be characterized by a large proportion of the cases sharing the same exposure, and the goal of this investigation was to look for exposures the cases shared in common. Trying to identify and interview control families would have complicated and lengthened the investigation considerably, and would not have increased the sample size of available cases. Thus we did not feel that including a comparison group of controls would have appreciably enhanced our ability to make inferences. Also, to the point about validating the responses, questionnaire responses that could be validated were validated by medical records review.	*No changes to the report are needed.*

Comment Number	Comment	Response	Action
108	**Chemicals of Interest and Sources of Environmental Contamination** *CalEPA identified a lengthy list of chemical that they would test for in the environment, including some suggested by the community, and developed a list of potential sources of environmental contamination, and provide substantial information on sampling. Results are reported in the appendices.*	Comment noted	*No changes to the report are needed.*
109	**Comments on APPENDICES** *Pesticides* *While I did not have time to critique this appendix, the data suggesting that 4 of the 19 pesticides of concern (chlorpirifos, endosulfan, MITC, trifluralin) may be associated with birth defects and some exceeded screening levels. Unfortunately, the parts of the appendix I read did not provide sufficient assurance to me that these compounds were not credible risks. They may warrant more study*	The commenter confused the pesticide air monitoring results with the computer modeling results. Chlorpyrifos, endosulfan, MITC, and trifluralin were detected in the air monitoring, but only chlorpyrifos and trifluralin are associated with birth defects. Additionally, none of the detected concentrations exceeded the screening levels for those chemicals. The computer modeling indicated one pesticide (MITC) that may cause birth defects exceeded the screening level for birth defects on one day. The computer modeling also indicated that two other pesticides (chlorpyrifos and diazinon) exceeded the screening levels for other health effects on several days. DPR agrees that these three pesticides warrant further study. Earlier data from other communities showed higher air concentrations than Kettleman City and prompted DPR to begin a more detailed evaluation and comprehensive risk assessments for all three pesticides. DPR has completed the MITC risk assessment and will begin implementing measures to reduce exposures statewide beginning in January 2011. The comprehensive risk assessments for chlorpyrifos and diazinon are in progress.	*This discussion was included in the draft report, so no changes to the report are needed.*
U.S. EPA Comments on California's Draft Report (12/22/10)			
110	**CDPH Study Part 1** While the report was clear in terms of defining the scope of their examination of the birth defect cases, CDPH did not provide information on the rates of these birth defects in the community. That is, while it is intuitive that there is an increase or excess in the absolute number of birth defects in the last 3 years when compared with the previous 20, the scale of that increase is difficult to comprehend without the contextual benefit of rates. It would be useful to compare the number of birth defects in a given time window with the number of "live births" observed in a similar time frame. This allows direct comparisons that are normalized over time and scale. For instance, 11 birth defects in 50 live births is remarkably different from 6 birth defects in 1000 live births. This level of detail was not in the report and could not be extracted from the data provided.	Information on the numbers of live births and fetal deaths has been added to the report.	*Incorporated.*
111	The report did not mention or specify to what degree the birth mothers direct health care providers (nurses, midwives and physicians) were interviewed or engaged for their perspective. While medical records were reviewed, conversations with those who have provided direct health care may be even more informative regarding potential patterns and the natural history of disease outcomes.	Data from interviews with the mothers was supplemented by medical record review, but we did not take the additional step to attempt to interview physicians. Reaching the women's multiple providers, who may not have clear recollections of individual patients given that it may be several years after last contact, would seem unlikely to yield information beyond what is in medical records.	*Comment noted.*

Comment Number	Comment	Response	Action
112	Risk management levels were not specified for the various contaminants under consideration. The exposure assessment did not discuss or associate risk levels with the various screening concentrations used or results found.	Regulatory standards and toxicity criteria were used to assess the exposure to environmental contaminants. The categories of the standards and criteria used were identified, such as Maximum Contaminant Levels (MCLs) and Public Health Goals (PHGs). These levels were compared to the environmental concentration. When the environmental concentration was below the standard or criteria, the chemical was not considered a health concern. When they were above the standard or criteria, they were further considered primarily to see if the chemical was above normal background levels. If it was, then it was considered a health concern. This process was discussed in the report. We did not put in tables of comparisons between the measured environmental concentrations and the different standards and criteria in order to make the report easier for the community to understand.	*No changes to the report are needed.*
113	1. There is a fair amount of uncertainty in the report regarding potential pesticide exposures. EPA recognizes that past pesticide exposures as a causal link to the increased birth defects reported since 2008 cannot be directly considered by current evaluations. Our outstanding concern is for present-day exposures that may be occurring for Kettleman City residents.	Comment noted.	*No changes to the report were made.*
114	2. DPR has only modeled and monitored for pesticides in ambient air. Other potential pesticide exposures (e.g., from agricultural drift, occupational exposure, household application, and other sources) are an outstanding issue.	The report discusses other potential sources of pesticide exposure, including the sources cited by EPA. Based on routine pesticide monitoring of food, water, and workers, DPR believes that pesticide exposure to Kettleman City residents by these other pathways is likely similar or lower than other communities. Use of most pesticides is lower in the Kettleman City area than other communities. There are no unusual crops or agricultural practices in the Kettleman City area. Weather patterns are similar to nearby communities. Based on CDPH's interviews of the birth mothers, there does not appear to be any unusual occupational exposures, or unusual pesticide use in homes or other structures in Kettleman City.	*No changes to the report were made.*
115	3. Because many of the birth mothers spoke of pesticide-like odors at times during their gestation, DPR might consider supplementing their model analysis by incorporating a discussion of odor thresholds vis-a-vis health-based thresholds of the subject pesticides.	Odors are a different issue from the potential toxic exposures that were the focus of this assessment. DPR's risk assessments and mitigation are meant to ensure that adverse health effects do not occur, but odors may still be present at pesticide levels that do not pose a risk to human health. However, DPR's efforts to reduce toxic exposures and volatile organic compound (VOC) emissions from pesticides should also reduce odors. Two pesticides that cause odor complaints and have relatively high use in the Kettleman City area are MITC and chlorpyrifos. DPR is implementing measures to reduce emissions and exposure to MITC. The odor from chlorpyrifos applications is primarily due to the VOC "inert ingredients" rather than the "active ingredient" in the pesticide products. Besides causing odors, VOCs also contribute to smog in the San Joaquin Valley. A new chlorpyrifos product has less VOCs and less odor than other products. DPR is considering requiring pesticide manufacturers to reformulate other chlorpyrifos products as part of its program to reduce VOC emissions from pesticides and improve air quality.	*This discussion was included in the draft report, so no changes to the report are needed.*

Comment Number	Comment	Response	Action
116	4. The report did not discuss bio-monitoring for pesticide residue levels in either the impacted cohorts or current community members. We are confident that CDPH had considered this request by community members, and arrived at sound reasoning for not conducting such tests at this time. We believe the community would benefit greatly from better understanding CDPH?s rationale for why bio-monitoring is not warranted at this time.	See response to Comment **5**.	--
117	5. EPA is currently planning a small-scale study to determine whether pesticides used only in agriculture are entering Kettleman City homes. EPA will use the results of this study to guide future work on reducing pesticide exposure within the community.	This is not a comment on the report. However, based on the available data, DPR's evaluation of Kettleman City did not indicate any need for mitigation measures to reduce pesticide exposures, except for the statewide measures already planned for MITC and the risk assessments on diazinon and chlorpyrifos to determine if statewide mitigation is needed. U.S. EPA's future study or other new data may eventually indicate a need to reduce exposure, but it seems premature to assume that mitigation measures to reduce exposure are needed before the data is gathered.	*No changes to the report were made.*
U.S. EPA Comments on the Department of Pesticide Regulation Report Appendix			
118	In the MITC section, one of the early paragraphs says that conversion of metam-Na to MITC is 95% and conversion of metam-K to MITC is 50.3%. Later, in the use data tables, a conversion factor of 0.57 is used to report MITC from metam-Na and a factor of 0.503 to report MITC from metam-K. Where did the 0.57 factor come from? Should it be 0.95?	DPR agrees that the amount of conversion to MITC is unclear.	*Report clarified to indicate the percentage conversion is based on the difference in molecular weight between metam-sodium and metam-potassium, and MITC.*
119	The modeling was done for the period Sept 2006 thru Dec 2009. It is not clear why use data and maps don't cover the same period.	DPR primarily evaluated annual pesticide use to detect trends and differences between Kettleman City and other communities. As explained in the following report section, DPR included applications during September – December 2006 in its modeling, but other evaluations of use for this period could be misleading because applications for a 4-month period would be compared to 12-month periods.	*This discussion was added to the report.*

Comment Number	Comment	Response	Action
120	I know this was a huge report to put together very quickly, and it was clearly written by many authors. The problem is that there is a lack of consistency in format among chemicals, so this technically difficult document is even more difficult to read and digest. For example, if vapor pressure is expressed in mPa for one chemical, and then expressed in mm Hg for another chemical, but both are described as non-volatile, it can be very confusing because the magnitude of the numbers is so different. Other examples of inconsistencies: --Units are missing in many places --Vapor pressure is variably reported in mPa, mm Hg, atm throughout --Henry's constants are sometimes unitless, or reported in various units --Table formats are different --Table content varies (e.g., some of those showing percentiles of usage show min and max and some don't) --The level of detail for each chemical really varies; e.g., 2,4-D goes into detailed descriptions of cited studies, which probably is not necessary --Molecular weight is sometimes called relative molecular mass --Sometimes the screening level calculation, including all safety factors, is clearly described, and sometimes not	DPR agrees with the comment.	*Report revised to make it more consistent. Some pesticides have more data than others, so the level of detail varies.*
121	All of the maps show a 5-mile zone around Kettleman, which is fine, but the map legend calls it a 5-mile buffer. The term buffer implies a zone of no application, so it's kind of confusing. Suggest using the term 5-mile radius, or something like that.	DPR agrees with the comment.	*Report revised as suggested.*
122	Figures 1 and 2 in Appendix DPR-B show application/detection patterns that suggest different processes. Figure 1 looks like delayed volatility; figure 2 looks more like drift at the time of application. I don't see any discussion of what it means when the application peaks and detections do or don't overlap.	DPR agrees with the comment.	*Report revised to expand the discussion of the lack of correlation between use and detected concentrations for some pesticides.*
Comments from Individuals Jill McElheney			
123	I would like to know if the brief mention of oil and gas operations in the area has been reviewed in depth, and if there is a potential association between the benzene emissions near the water source?	There is an in-depth study of links between the presence of benzene in the groundwater and the oil and gas operations in the area. This study by the Central Valley Regional Water Quality Control Board was appended to the report. One of the wellhead treatment units that removes benzene from the groundwater is emitting excessive levels of benzene into the air. The San Joaquin Air Pollution Control District is now working with the Kettleman City Community Service District on how to remediate the problem	*The Central Valley RWQCB study was appended to the report.*
124	Additionally, were any records available that determined that the filtration system of the untreated water ever failed?	We checked with the engineering firm that maintains the air stripping units used to remove benzene from the groundwater before it is put into the distribution system. They report that these units have not had any problems since 1998 when they were installed. These units always start the air flow before water enters them to ensure the water is properly treated.	*No changes to the report were made.*

Comment Number	Comment	Response	Action
125	Are you and your staff familiar with the latest research on benzene and birth defects? Did you rule this out based only on the filtration system?	Benzene was included in the chemicals being investigated because it is known to cause developmental toxicity. Benzene exposure in Kettleman City was not considered the cause of the birth defects because it was not found in the tap water of the homes sampled and its ambient air level was similar to the ambient levels in other San Joaquin Valley cities. Benzene air concentrations were found at high levels in one small localized area next to one of the well water treatment units. See response to Comment 123.	*No changes to the report were made.*
126	After reading this report, I am copying PHMSA (U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration) on for you and your staff to speak with. I believe this needs to be addressed in your report and to the community in any future meetings. My concerns remain about the benzene, and I ask that Dr. Reilly will elaborate on records available to track the source.	The California Cancer Registry reviewed cancers reported between 1996 and 2008 for residents of census tract 16.01, which includes Kettleman City. The cases (less than 5 from 96-08) of pediatric (0-14 years of age) acute lymphocytic leukemia resided in areas of the census tract other than Kettleman City. Benzene in the groundwater below Kettleman City has been a long term issue and appears to related to natural petroleum deposits. A long term requirement for treatment to reduce/remove benzene has been in place for the public water system. The treatment removes benzene to non-detectable levels in water at the tap. Pediatric acute lymphocytic leukemia rates are higher in Central Valley agricultural counties than statewide. This is the subject of several epidemiologic research studies, including the continuing California Childhood Leukemia study led by Stanford and University of California, Berkeley scientists.	*Changes have been made to the report*
127	I look forward to hearing about the failure rate of the long term treatment to reduce/remove benzene in the Kettleman City water. I am particularly concerned given the pipeline corrosion issues there. Dr. Denton has assured me this will be investigated by the technical group to be properly ruled out. You will need to contact the DOT PHMSA to discuss the pipeline incidents. I will tell you that I have tracked benzene contaminated groundwater all over the country. This is the first I have heard that it is naturally occurring at these levels, treated, and served to a community.	Benzene has been monitored historically in Kettleman City. There has been a treatment system in place since 1998 that removes benzene from the drinking water. Please see the response to Comment 124. The Department of Transportation-Pipeline and Hazardous Materials Safety Administration (DOT-PHMSA) has a searchable incident reporting database covering ten years on its website. There are no reports of pipeline spills over the last ten years in Kettleman City. The report by the Central Valley Regional Water Quality Control Board (CVRWQCB) that is now appended to the exposure assessment report provides a discussion on the possible sources of benzene found in the groundwater.	*CVRWQCB Report now appended to exposure assessment report.*
128	As a children's environmental health advocate, I am concerned with the statement you made about benzene and the childhood leukemia rates.	See responses to Comments 104 and 126	--
129	Also, being this hazardous waste landfill is a resting place for PCBs, I would like the opportunity to review the investigative methods that were used to reach this conclusion.	The final report and appendices discuss the whole investigation and how samples were collected and how the evaluation was done.	*No changes to the report are needed.*

Comment Number	Comment	Response	Action
Letters on the Drinking Water			
130	We received 28 letters from residents of Kettleman City stating that the findings confirm that the water in Kettleman City is not safe to drink. There needs to be a water treatment plant built to provide safe, clean water to the residents of Kettleman City. Antonio y Doloris Alcala Maria Aguilar Heather Camacho Apina Cerda Rosa Cerda Jesus Ferda Humberto Galvez Edilia Gonzales Porfidio Gutierrez Ama Gutimez Esperanza Gutirrez Shirley Ingram Marcos Lopez Lois Lusk Monica Martinez Rosa M. Moreno Alfredo Niete Dora Ortega S. Priete Araceli Rosas Socorro Ruiz C. Sanchez Rodolfo Sanchez Josefa Tapela Selia Torres Marge Vargas Francisco Aguilar Vasquez Aletha Ware (We apologize if some names are misspelled or not recognizable. We did our best in some cases to interpret handwriting.)	CDPH strives to assure that all California residents have drinking water that meets current standards. Using funding provided by CDPH, the local water district, Kettleman City Community Services District (CSD), researched options to supply drinking water that is compliant with all drinking water standards. The final selection of a drinking water project option has not been made as of this writing. CDPH is working with CSD to see if the proposed project meets the federal and state requirements of CDPH's State Revolving Fund (SRF) program. CDPH has determined that it could provide funding to CSD if Kings County provides grant dollars for the remainder of the needed funds to implement a groundwater-based solution and meets all of the requirements of the SRF. The selected water system project option will require operations and maintenance costs. Affordability and sustainability of the selected project option are required considerations when using CDPH's SRF to construct capital improvement projects. Monthly meetings of the Kettleman City Community Services District board are open to the public and are held in Kettleman City on the third Tuesday of each month. For more information, contact CSD at 559 386-5866. Same as response to Comment **1**	*Information Incorporated*

Appendix: Correspondence regarding radiologic waste at KHF landfill (2 letters)

State of California—Health and Human Services Agency
California Department of Public Health

CDPH

MARK B HORTON, MD, MSPH
Director

ARNOLD SCHWARZENEGGER
Governor

September 24, 2009

Mr. Phil Rutherford, Manager
Health, Safety & Radiation Service
The Boeing Company
Santa Susana Field Laboratory
5800 Woolsey Canyon Road,
Canoga Park, CA 91304-1148

Dear Mr. Rutherford,

In response to your letter dated September 11, 2009, regarding SHEA-109081, disposal of IRSA outfall 009 soil to a Class 1 or 2 hazardous waste landfill. California Department of Public Health, Radiologic Health Branch (RHB) has reviewed the analysis provided in the attachment and finds the proposal does not represent a public health threat and meets the criteria of the Executive Order D-62-02.

Therefore; RHB concurs with your finding to send the material to either a Class 1 or Class 2 landfill.

If you have any questions, please contact me at (916) 440-7942.

Sincerely,

Gary W. Butner, Chief
Radiologic Health Branch

cc: James M. Passas, DTSC
Samuel Unger, RWQCB
Cassandra Owens RWQCB
William Chi, CDPH-OLS
Peter Sapunor, CDPH-OLS

Radiologic Health Branch, MS 7610, PO Box 997414, Sacramento, CA 95899-7414
(916) 327-5106
Internet Address: www.cdph.ca.gov

State of California—Health and Human Services Agency
California Department of Public Health

MARK B HORTON, MD, MSPH
Director

ARNOLD SCHWARZENEGGER
Governor

October 23, 2009

Mr. Phil Rutherford, Manager
Health, Safety, and Radiation Services
The Boeing Company
Santa Susana Field Laboratory
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148

Dear Mr. Rutherford:

This is to follow up on your September 11, 2009, letter and waste certification package to Mr. Gary Butner, Chief, Radiologic Health Branch (RHB), California Department of Public Health (CDPH), in which you requested CDPH's review and confirmation that the soil to be excavated at Outfall 009, Santa Susana Field Laboratory (SSFL), as part of the Interim Source Removal Action (ISRA) program meets the permit requirements of Class 1 and 2 landfills in the State of California and that the disposal of the soil would not pose a threat to public health.

On September 24, 2009, Mr. Butner responded to your letter and stated that based on the review of the analysis submitted by The Boeing Company (Boeing) that the proposal as outlined in Boeing's letter does not represent a public health threat and meets the criteria of Executive Order D-62-02. Mr. Butner then concurred with your findings to send the material to either a Class 1 or Class 2 landfill.

Upon further review of the correspondence and subsequent discussion with interested parties, it has become evident that a further explanation of CDPH's role in this area is necessary in order to clarify the context of the September 24, 2009, letter.

Under California Hazardous Waste Control Law (Health and Safety Code, Division 20, Chapter 6.5), the Department of Toxic Substances Control (DTSC) is the state agency solely entrusted with permitting or granting authorization to operate Resource Recovery and Conservation Act (RCRA), non-RCRA, or Toxic Substances Control Act hazardous waste landfills. DTSC is similarly entrusted with permitting the disposal of such hazardous materials. CDPH RHB does not license or permit Class I or Class 2 landfills and does not have statutory or regulatory authority to approve or waive the permit requirements of such landfills.

Center for Environmental Health, MS 0611, P.O. Box 997377, Sacramento, CA 95899-7377
(916) 445-0275
Internet Address: www.cdph.ca.gov

However, CDPH does provide consultative services and subject matter expertise to interested state agencies in the disposal of radiological contaminants in California. This is done to assist in ensuring compliance with the California Radiation Control Law (Health and Safety Code, Chapter 8). Based on the data provided in the ISRA, the September 24, 2009, letter provided CDPH's analysis whether the excavated soil would: 1) represent a public health threat; and 2) meet the criteria of Executive Order D-62-02.

Senate Bill (SB) 990 (chaptered as Health and Safety Code section 25359.20) designated DTSC as the lead agency for SSFL. It requires that DTSC, as the lead agency, must approve any response action undertaken at SSFL. Based on Boeing's conclusions in the ISRA, it would seem that any interim removal action conducted at SSFL must obtain approval from DTSC pursuant to SB 990 and removal for off-site disposal.

Given the provisions of SB 990, future correspondence and questions relating to permit compliance and requirements should be submitted to the lead federal or state regulatory agency.

Sincerely,

Rufus B. Howell
Deputy Director

cc: Ms. Rachel Wagoner
Senate Environmental Quality Committee
State Capitol, Room 2205
Sacramento, CA 95814

Mr. Rick Brausch
Deputy Director
Office of Legislative and Regulatory Policy
Department of Toxic Substances Control
P.O. Box 806
Sacramento, CA 95812-0806

Ms. Monica Wagoner
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